

BLEEDING GASTRIC AND DUODENAL ULCERS*

REPORT OF 52 CASES

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IN DISCUSSING bleeding ulcers, confusion may arise unless one definitely states to which type of case one is referring. This presentation will include only those cases that have had one or more gross hæmorrhages that were severe enough to confine the patients to the hospital. Cases in which an occasional tarry stool has occurred, or those in which occult blood has been found in the gastric or stool examination, are excluded. During the past nineteen and one-half years, or from January 1, 1911, to July 1, 1930, there have occurred fifty-two cases of bleeding ulcers in the Fourth Surgical Division at Bellevue Hospital. These cases have been divided according to the year of hæmorrhage to determine whether there has been an increase in the frequency during recent years, and Table I will reveal a marked increase

TABLE I

Year in Which Hæmorrhage Occurred

1911	4	1922	0
1912	1	1923	1
1913	2	1924	3
1914	1	1925	2
1915	1	1926	2
1916	1	1927	3
1917	0	1928	10
1918	1	1929	13
1919	0	1930	6
1920	0		—
1921	1	Total	52

during the past two and one-half years. During this period twenty-nine hæmorrhages occurred, or over 50 per cent. of the total. A paper² on acute perforated ulcers, which included 105 cases from the Fourth Surgical Division from 1911 to 1929, revealed one perforation in 1911 as against thirteen for 1929. Whether this increase in complications is due to more conservative treatment of ulcers during the past few years I would not attempt to say, but Eusterman, in discussing a recent paper of Balfour's¹ in which 500 consecutive cases of duodenal ulcer were studied in which gastroenterostomy alone was done during the years of 1918 and 1919, stated: "The fact that 87 per cent. of patients with duodenal ulcer had complete cure or satisfactory relief is a commendable showing. That such cases are safeguarded from

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future perforation and to a large degree from further hæmorrhage and that subsequent disturbances are easily controlled is worthy of note."

The cases with which we are here concerned have been divided according to the month in which the hæmorrhage occurred, and in Table II it will be

TABLE II
Month in Which Hæmorrhage Occurred

January	5	August	4
February	11	September	4
March	4	October	3
April	5	November	2
May	6	December	4
June	2		—
July	2	Total	52

noted that eleven cases, or one-fifth of the total number, occurred in February. It was thought advisable to further divide the cases into three groups: Group I, cases that died with or without operation; Group II, cases not followed since leaving the hospital; and Group III, cases under observation.

Group I.—There have been six deaths in cases not operated upon and four deaths following operations for bleeding ulcers. Of the six cases that died without operation, it is interesting to note that four of these had negative gastric histories. In spite of transfusions and other supportive measures, these cases resulted in fatalities and their conditions were such that operative intervention could not have been done. (See Table III.) There were also four post-operative deaths in cases operated upon for bleeding ulcers. In studying these cases it would seem that Case I, Table IV, should have been given a trial at medical treatment. Case III, Table V, with a definite ulcer at operation, which consisted of gastroenterostomy and appendectomy, died from pneumonia and no evidence of the ulcer was found at autopsy, this indicating that the ulcer had completely healed within five days. In view of

TABLE III
Cases of Bleeding Ulcers Not Operated upon Resulting in Death

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
1	July 8, 1911	60	M	Pain for nine months, vomiting blood, and blood in stools several days.	Duodenum	None
2	December 14, 1925	43	M	Operated for perforated ulcer, November, 1922. Symptom-free until past six months. Now pain after meals. On admission to hospital vomited blood.	Duodenum	Operation
3	March 11, 1927	35	M	Pain in abdomen and vomiting for nine days but no blood.	Duodenum	None
4	March 23, 1927	51	F	Vomiting blood twelve hours.	Duodenum	None
5	August 8, 1927	44	M	Vomiting blood six hours.	Gastric	None
6	August 20, 1929	56	M	Bleeding from rectum seven days.	Gastric	None

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TABLE III—*Continued*

No.	Stay in hospital	Treatment in hospital	X-rays	Autopsy
1	4 days. Died, July 12, 1911.	Infusions and hypodermoclysis.	None	Yes
2	4 days. Died, December 18, 1925.	Infusions and one transfusion, 500 cubic centimeters.	None	Yes
3	4 days. Died, March 15, 1927.	Profuse hæmorrhage, died within two hours.	Negative	Yes
4	6 hours. Died, March 23, 1927.	Infusion.	None	Yes
5	2 days. Died, August 10, 1927.	Transfusion, August 8, 1927, 500 cubic centimeters. Transfusion, August 9, 1927, 500	None	Yes
6	3 days. Died, August 23, 1929.	Infusions, transfusions, August 21, 1929, 500 cubic centimeters. Transfusion, August 23, 1929, 800 cubic centimeters.	None	Yes

TABLE IV

Cases of Bleeding Ulcers Operated upon That Died

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
1	May 8, 1928	34	M	Seven years ago attacks began, with pain after meals for a few months. Another attack five years ago. Two weeks ago had a third attack, vomiting coffee-ground material and tarry stools. On leaving Cornell Clinic the day of admission, fainted and was brought to hospital.	Duodenum	No regulated treatment, visited Cornell Clinic and X-rayed
2	February 6, 1929	48	M	Pain after eating with belching of gas for twenty-five years. Vomiting at intervals for two years. Tarry stools for seven days. Day of admission became dizzy, weak, and fainted.	Duodenum	No regulated treatment

No.	Stay in hospital	Treatment in hospital	X-rays	Autopsy
1	3 days. Died, May 11, 1928. Lobar pneumonia.	Operation, May 9, 1928, gastroenterostomy.	Duodenal ulcer	No
2	35 days. Died, March 11, 1929. Pneumonia.	February 9, 1929. Transfusion, 500 cubic centimeters. Operation, March 8, 1929, partial gastrectomy.	Duodenal ulcer, March 5, 1929	Yes

TABLE V

Cases of Bleeding Ulcers Operated upon That Died

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
3	April 22, 1929	32	M	Pain after meals for one month. Tarry stools for several days.	Duodenum	No regulated treatment
4	February 3, 1930	59	M	Epigastric pain for one year. Positive X-rays for eight months before admission. Losing weight and vomiting blood for several days.	Gastric	Advised as to diet

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TABLE V—Continued

No.	Stay in hospital	Treatment in hospital	X-rays	Autopsy
3	14 days. Died, May 6, 1929. Lobar pneumonia.	Operation, May 1, 1929, gastroenterostomy, appendectomy. Found on anterior surface of first portion of duodenum an indurated area in which crater could be felt.	April 28, 1929, duodenal ulcer	Yes. No evidence of duodenal or gastric ulcer.
4	27 days. Shock.	Operation, February 28, 1930. Partial gastrectomy. Transfusions, February 11, 1930, 500 cubic centimeters; February 13, 1930, 750 cubic centimeters; February 22, 1930, 600 cubic centimeters; February 28, 1930, 500 cubic centimeters.	June 26, 1929, ulcer of lesser curvature. Pars media	No

this fact, it might seem as if more conservative operations in Cases II and IV would not have been advisable.

Group II.—There were twenty-one cases in this group. Four cases which were operated upon for bleeding ulcers have not been followed. The type of operation can be seen in Table VI. There are four other cases that have

TABLE VI
Cases Operated upon for Bleeding Ulcers But Not Followed

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
1	May 15, 1911	47	F	Pain in abdomen and vomiting of food for thirteen years. Vomiting food on admission.	Pyloric	No regulated medical treatment
2	October 6, 1911	21	M	Indigestion and abdominal pain for ten months. Vomiting of blood day of admission.	Ulcer not found at operation	None
3	October 10, 1918	25	F	Gastric hæmorrhage three years before admission on two occasions. Pain for six months. Vomiting blood day of admission.	Gastric	None
4	May 1, 1924	35	M	Pain and discomfort for six months. Vomited blood just before admission.	Gastric	None

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
1	18 days. Discharged, June 3, 1911.	Operation, May 18, 1911. Gastroenterostomy.	None	Not followed
2	27 days. Discharged, November 3, 1911.	Operation, October 9, 1911. Gastroenterostomy.	None	Not followed
3	60 days. Discharged, December 10, 1918.	Operation, November 14, 1918. Partial gastrectomy.	October 25, 1918, ulcer of lesser curvature	Not followed
4	40 days. Discharged, June 9, 1924.	Infusions for hæmorrhage. Operation, May 27, 1924. Gastroenterostomy.	May 20, 1924, ulcer of lesser curvature	Not followed

been operated upon for chronic ulcers without pre-operative histories of hæmorrhages but which have bled post-operatively. In Table VII, Case IV, it is interesting to note that for eighteen years following a gastroenterostomy for pyloric obstruction, the patient was symptom-free, after which time he

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TABLE VII

Cases That Have Bled Since Being Operated upon for Chronic Ulcers

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
1	February 27, 1916	32	M	Stomach trouble four years. After operation symptom-free for six months. Pain for three months. Vomiting of blood for five weeks.	Gastric	Operated upon for acute perforated ulcer, May 29, 1915. Simple closure
2	August 15, 1926	32	M	Pain for several years. After operation symptom-free until one month ago. Now has pain and vomiting blood for one month. Also blood in stools.	Gastric and duodenal	Operation, April 1, 1926, gastroenterostomy. Followed. Sippy diet since operation
3	February 27, 1929	27	M	Stomach trouble ten years. Operated upon twice. Vomiting of blood few hours before admission.	Duodenal	Operated upon, November, 1924, exploratory. April, 1926, gastroenterostomy
4	April 19, 1928	61	M	Operated upon, June 20, 1910, Carney hospital, Boston, for duodenal ulcer with pyloric obstruction. Well until two weeks ago. First noticed tarry stools followed in few days by abdominal pain which has continued. Stools continued tarry and this A. M. vomited blood.	Duodenal	None since operation

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
1	11 days. Discharged, March 10, 1916.	Rest and Sippy diet. Operation advised. Refused.	March 8, 1916, ulcer of lesser curvature.	Not followed
2	3 days. Left, August 18, 1926, at own request.	Sippy diet and one infusion.	March 15, 1926, gastric and duodenal ulcer	Not followed
3	36 hours. February 28, 1929.	Vomiting blood four hours before leaving. Left at own request, February 28, 1929.	March 10, 1926, duodenal ulcer	Not followed
4	28 days. Discharged, May 17, 1928.	Sippy diet.	May 10, 1926, gastroenterostomy, stoma normal; duodenal deformity	Not followed

TABLE VIII

Cases Treated for Bleeding Ulcer But Not Followed

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
1	February 25, 1911	30	M	Pain in upper abdomen for one year. Vomiting blood two days and vomiting.	Duodenal	None
2	July 21, 1911	19	M	Pain for four weeks. Vomiting blood twenty-four hours.	Gastric	None
3	October 19, 1911	40	F	Discomfort for a few months. Vomiting of blood for twelve hours.	Gastric	None
4	January 19, 1912	19	F	Pain in epigastrium for two weeks. Bleeding from rectum and vomiting blood four days.	Gastric	None

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TABLE VIII—*Continued*

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
1	32 days. Discharged, March 27, 1911.	Infusions and diet.	None	Not followed
2	2 days. Discharged, July 23, 1911, at own request.	Hypodermoclysis.	None	Not followed
3	7 days. Discharged, October 26, 1911, at own request.	Diet and infusions.	None	Not followed
4	60 days. Discharged, March 18, 1912.	Horse serum and infusions. Bled for seven days after admission.	None	Not followed

had a profuse hæmorrhage, whereas Case II began hæmorrhaging only three and one-half months following the operation. This leaves thirteen cases of bleeding ulcers that were treated by conservative measures but have not been

TABLE IX

Cases Treated for Bleeding Ulcers But Not Followed

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
5	September 28, 1913	31	F	Pain in upper abdomen three weeks. Vomited blood three weeks before admission and on admission.	Gastric	None
6	November 30, 1913	29	F	Pain in abdomen after meals for three months. Vomited blood one week before admission and tarry stools since.	Duodenal	None
7	February 13, 1914	27	M	Abdominal pain six days. Vomiting blood and tarry stools three days.	Gastric	None
8	September 7, 1915	32	F	Pain in upper abdomen for thirteen years. Vomited blood and in hospital thirteen years ago for same. No other bleeding until six hours before admission; vomited blood.	Duodenal	For hæmorrhage thirteen years ago

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
5	14 days. Discharged, October 11, 1913.	Fluids by mouth, ice cap to abdomen and infusions.	October 9, 1913, gastric ulcer lesser curvature	Not followed
6	55 days. Discharged, January 23, 1914.	Horse serum, December 3, 1913, 20 cubic centimeters; horse serum, December 4, 1913; transfusion, December 6, 1913, 900 cubic centimeters.	January 10, 1914, duodenal ulcer	Not followed
7	17 days. Discharged, March 2, 1914.	Horse serum, February 14, 1914, 20 cubic centimeters; infusions and diet.	March 27, 1914, gastric deformity, lesser curvature	Not followed
8	75 days. Discharged, November 18, 1915.	Horse serum three times; infusions and diet.	September 16, 1915, duodenal deformity	Not followed

followed since leaving. See Tables VIII, IX and X. One case in this group is of interest. Case VIII, female, aged thirty-two years, had a gastric hæmorrhage thirteen years before admission and was treated in a hospital at the time but was symptom-free until six hours before admission.

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TABLE X

Cases Treated for Bleeding Ulcers But Not Followed

No	Date	Age	Sex	Past history	Location of lesion	Previous treatment
9	January 13, 1924	38	M	Pain in epigastrium for one year. Vomiting of blood twenty-four hours.	Duodenal	None
10	February 13, 1927	28	M	Pain in abdomen and vomiting blood twenty-four hours.	Duodenal	None
11	September 1, 1928	32	M	Negative.	Duodenal	None
12	August 12, 1929	38	M	Negative.	Duodenal	None
13	November 19, 1928	30	M	Pain in abdomen for eight months. Tarry stools for two weeks.	Pyloric	None, except examinations

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
9	8 days. Discharged, January 21, 1924.	Transfusion, January 15, 1924, 900 cubic centimeters.	January 20, 1924, duodenal ulcer	Not followed
10	1 day. Left at own request, February 14, 1927.	Sippy diet.	None	Not followed
11	20 days. Discharged, September 20, 1928.	Hypodermoclysis, September 1, 1928, September 2, 1928, September 3, 1928; Sippy diet.	September 18, 1928, duodenal ulcer	Not followed
12	3 days. Left at own request, August 15, 1929.	Infusions and Sippy diet.	None	Not followed
13	7 days. Discharged, November 26, 1928.	Infusions and Sippy diet.	November 22, 1928, pyloric ulcer	Not followed

Group III.—There are now twenty-one cases of bleeding ulcers under observation in the Gastro-enterological Clinic of the Fourth Medical and Surgical Divisions. Of this number seven have been operated upon for bleeding ulcers. See Tables XI, XII and XIII. Case I has been operated upon twice for a bleeding ulcer: the first operation being a gastroenterostomy done in March, 1924, after which the patient continued to bleed, and a second operation, which was purely an exploration, performed August, 1927. The patient has been symptom-free for the past three years. By the greatest

TABLE XI

Cases Operated upon for Bleeding Ulcers

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
I	January 23, 1924	57	M	(1) Bleeding from rectum ten days, also vomiting blood. Six years ago similar attack. Another four years ago. No pain or abdominal discomfort. (2) Bleeding from rectum. (3) Well until four days ago. Tarry stools and vomiting blood. (4) Well since last discharge until today. Tarry stools and vomiting blood.	Duodenal	Treated for hæmorrhage on two occasions at home

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TABLE XI—Continued

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
1	January 23, 1924 to February 21, 1924. Re-admitted, February 28, 1924. Discharged, March 24, 1924. Re-admitted, September 5, 1926, to September 24, 1926. Re-admitted, August 18, 1927, to October 7, 1927.	(1) January 25, 1924, transfusion, 600 cubic centimeters. (2) Operation, March 6, 1924, gastroenterostomy. (3) Transfusion, September 7, 1926, 400 cubic centimeters. (4) Transfusion, August 20, 1927, 500 cubic centimeters. (5) Operation, September 16, 1927, exploratory, found normal gastroenterostomy with duodenal ulcer but nothing done.	February 20, 1924, duodenal ulcer September 31, 1926, stoma normal January 4, 1929, gastroenterostomy. Stoma normal May 15, 1930, gastroenterostomy. Stoma normal	No pain, vomiting or tarry stools since last operation. Last seen, September 11, 1930

stretch of the imagination the last operation could not have been a factor in the patient's condition during this period of time. Case VI also was of interest, as he had first a pyloroplasty for hæmorrhage and pain in December, 1925, then two years later, in January, 1928, a partial gastrectomy for pain, and again in December, 1929, he had several profuse hæmorrhages. There

TABLE XII

Cases Operated Upon for Bleeding Ulcers

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
2	February 2, 1928	30	M	Six years ago pain and vomiting of blood and tarry stools. Medical treatment. Well two and one-half years, then another attack. Present attack one week ago, vomiting blood and tarry stools.	Duodenal	Modified Sippy diet
3	April 29, 1928	37	M	No history of abdominal pain. Vomiting blood and tarry stools three days before admission. Admitted in shock.	Duodenal	None
4	September 6, 1928	30	M	(1) Patient has had pain for eight years after meals. Vomited blood day before admission. (2) Since leaving hospital, pain after meals and tarry stools daily.	Duodenal	In hospital eight years ago in California for three weeks.

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
2	February 2, 1928 to March 25, 1928.	February 9, 1928, transfusion, 500 cubic centimeters. February 10, 1928, operation, cauterization of ulcer, gastroenterostomy and appendectomy.	February, 7, 1928, duodenal ulcer April 4, 1930, deformity first portion duodenum. Stoma normal	March 6, 1930, symptom-free since operation. Last seen, July 31, 1930
3	April 29, 1928 to June 19, 1928.	April 29, 1928, transfusion, 500 cubic centimeters. May 5, 1928, transfusion, 500 cubic centimeters. June 1, 1928, operation, cauterization of ulcer, gastroenterostomy and appendectomy.	May 20, 1928, duodenal ulcer. July 15, 1930, duodenal deformity. Stoma normal	Symptom-free since operation. Last seen, October 2, 1930
4	September 6, 1928 to September 24, 1928. Re-admitted, October 25, 1928 to November 9, 1928.	(1) On Sippy diet, developed severe pain. Diagnosis, perforated ulcer. Operation, September 9, 1928, exploratory, no ulcer found, nothing done. (2) Operation, October 26, 1928, cauterizing of ulcer, gastroenterostomy and cholecystectomy.	September 25, 1928, duodenal ulcer	After leaving hospital first time would not follow diet, used alcohol frequently. Returned, January 5, 1929, not following diet

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TABLE XIII

Cases Operated Upon for Bleeding Ulcer

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
5	August 27, 1927	42	M	Pains after eating for two years. Black stools at intervals. Vomiting blood before admission.	Duodenal	None
6	December 1, 1929	31	M	Pain in abdomen after meals for eleven to twelve years. Hæmorrhage, December 17, 1925.	Duodenal	December 17, 1925, transfusion, 700 cubic centimeters for hæmorrhage. Operation, December 28, 1925. Finney pyloroplasty. Re-operated upon January 8, 1928. Partial gastrectomy. Post-graduate Hospital.
7	January 29, 1930	45	M	Pains after meals for two years. Blood in stools and vomiting three hours before admission.	Duodenal	None

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
5	31 days. August 27, 1927 to September 28, 1927.	Infusions and operation, September 1, 1927. Gastroenterostomy.	February 7, 1930, ulcer first portion duodenum. Stoma normal	Symptom-free since operation. Last seen, August 2, 1930
6	24 days. Discharged, December 24, 1929.	Transfused, December 4, 1929, 500 cubic centimeters; transfused, December 9, 1929, 500 cubic centimeters.	August 15, 1930, partial gastrectomy. Stoma normal	Symptom-free since leaving hospital. Last seen, October 2, 1930
7	36 days. Discharged, March 6, 1930.	Transfused, January 29, 1930, 600 cubic centimeters; transfused, January 31, 1930, 500 cubic centimeters; transfused, February 3, 1930, 350 cubic centimeters; transfused, February 10, 1930, 500 cubic centimeters; Operation February 14, 1930. Excision of ulcer and gastroenterostomy.	September 27, 1930, stoma normal. Duodenal deformity	Symptom-free. Last seen, October 2, 1930

are five cases that have bled while being treated for chronic ulcers under medical management in the clinic. Although they were progressing satisfactorily before the hæmorrhages they required hospital care while bleeding but have not been operated upon. Since their hæmorrhages they have re-

TABLE XIV

Cases That Bled Under Medical Treatment in the Clinic

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
1	April 28, 1928	26	M	Pain after meals for seven years. Tarry stools two weeks before entering hospital.	Duodenal	Treated by physician before entering clinic, on milk diet.
2	March 16, 1929	56	M	Pain and discomfort in abdomen for ten years.	Duodenal and gastric	No regulated treatment before entering clinic
3	March 23, 1929	43	M	Pain after meals for one month.	Duodenal	No regulated treatment before entering clinic

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TABLE XIV—*Continued*

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
1	From October 6, 1929 to October 17, 1929.	Sippy diet, ice cap to abdomen. Transfusion, 500 cubic centimeters.	April 23, 1928, duodenal ulcer. October 26, 1928, same. October 23, 1929, same. March 15, 1930, same	No bleeding since leaving hospital but slight pain every few weeks. Last seen April 15, 1930
2	From October 26, 1929 to November 17, 1929.	Sippy diet. Transfusion, November 1, 1929, 500 cubic centimeters. Transfusion, November 6, 1929, 500 cubic centimeters. Operation advised, refused.	March 13, 1929, ulcer on lesser curvature and duodenal ulcer. October 15, 1929, same	Had a hæmorrhage, January 5, 1930 and taken to Fordham Hospital. Operation at Mt. Sinai Hospital, February 4, 1930, ca. of stomach. June 14, 1930, no complaints
3	From September 7, 1929 to September 28, 1929.	Sippy diet. Transfusion, September 9, 1929. Transfusion, September 15, 1929, 500 cubic centimeters.	March 15, 1929, duodenal ulcer. September 8, 1930, duodenal ulcer	October 7, 1930, no bleeding but some pain since leaving hospital, April 10, 1930

sumed satisfactory progress under medical care. (See Tables XIV and XV.) There are nine cases that were brought to the hospital for hæmorrhages that are now being followed in the clinic. These cases are, at the present time,

TABLE XV

Cases That Bled Under Medical Treatment in the Clinic

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
4	May 25, 1929	41	M	No history of abdominal discomfort. History of tarry stools and vomiting blood.	Duodenal	Transfused in January, 1928, also in March, 1929
5	April 28, 1928	26	M	Pain and indigestion for six years.	Duodenal	In clinic. Passed tarry stools, January 3, 1929 to January 20, 1929

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
4	January 17, 1928 to February 10, 1928. March 9, 1929 to March 29, 1929.	Sippy diet and transfusions.	January 21, 1928, negative. March 21, 1929, duodenal ulcer. November 29, 1929, duodenal ulcer	No bleeding since March 9, 1929
5	April 25, 1929 to May 29, 1929. Profuse hæmorrhage ten days after operation for acute perforation.	Operation, April 25, 1929. Transfusion, May 5, 1929, 500 cubic centimeters.	April 8, 1928, duodenal ulcer. September 16, 1929, duodenal ulcer. April 3, 1930, duodenal deformity	Symptom-free. Last seen, August 28, 1930

symptom-free. (See Tables XVI, XVII and XVIII.) Careful laboratory work has been done on all the bleeding cases. Each case has had a gastric analysis, complete blood count, bleeding and clotting time, clot retraction time, platelet counts, complete blood chemistry including urea nitrogen, N. P. N., creatinine, chlorides, sugar, calcium and phosphorus, also urinalysis, Wasser-

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TABLE XVI

Cases That Bled Without Previous Treatment

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
1	April 14, 1928	60	M	Vomiting blood and tarry stools a few hours before admission.	Duodenal	None
2	December 30, 1928	32	M	(1) Pain after meals for two months. (2) Gained forty pounds. No complaints until two months before admission. Vomiting blood seven days.	Gastric. Lesser curvature	None
3	February 24, 1929	46	F	Treated twenty-five years ago in Bellevue Hospital for an ulcer of stomach. In hospital few weeks. Symptom-free until two weeks ago; since then pain; vomiting blood two hours before admission.	Duodenal	Hospital treatment for ulcer twenty-five years ago. Well for twenty-five years

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
1	May 14, 1926 to May 26, 1926	Sippy diet and infusions.	May 25, 1926, duodenal ulcer. December 8, 1928, negative	No vomiting of blood or tarry stools. Symptom-free, March 9, 1929
2	December 30, 1928 to January 16, 1929. Re-admitted August 30, 1930 to September 13, 1930	(1) January 7, 1929, transfusion, 450 cubic centimeters. Sippy diet. (2) September 7, 1930, transfusion, 500 cubic centimeters. Sippy diet.	January 15, 1929, ulcer on lesser curvature of stomach. September 9, 1930, G. I. Negative. September 10, 1930, chest negative	Last seen, September 25, 1930
3	February 24, 1929 to March 9, 1929	Sippy diet; hypodermoclysis.	March 8, 1929, duodenal ulcer. August 2, 1929, duodenal ulcer. July 22, 1930, negative	No vomiting or tarry stools. Symptom-free. Last seen, July 31, 1930

mann and stool examination. All work was essentially negative except a low hæmoglobin and red blood count.

Summary.—Of the fifty-two cases reported in this paper, there were ten deaths, six of which were in cases treated by conservative measures, the deaths occurring in spite of supportive treatment. There were four post-operative

TABLE XVII

Cases That Bled Without Previous Treatment

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
4	March 31, 1929	29	M	(1) Pain in epigastrium for six or seven years. (2) Vomiting blood two days.	Pyloric	None
5	November 23, 1929	26	M	One year ago operated upon for chronic appendicitis. Going to work fainted on subway steps and cut his face. Vomited blood.	Duodenal	None
6	May 10, 1929	41	F	Pain after meals for three years which was relieved by soda. Vomiting blood and tarry stools for two days.	Duodenal	None

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TABLE XVII—*Continued*

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
4	March 31, 1929 to May 10, 1929. Re-admitted February 21, 1930 to March 11, 1930	(1) Sippy diet and infusions. (2) Sippy diet and infusions.	April 15, 1929, pyloric ulcer. Refused others	Patient began treatment May 11, 1929. Discontinued in a few weeks. Second hæmorrhage, February 21, 1930. Returns irregularly.
5	November 23, 1929 to December 16, 1929	Transfusion, November 27, 1929, 500 cubic centimeters. Sippy diet.	November 30, 1929, ulcer, first portion of duodenum. August 5, 1930, duodenal ulcer	No complaints, except occasional pain. Last seen, October 2, 1930
6	May 16, 1929 to May 24, 1929	Infusions and Sippy diet.	May 20, 1929, duodenal ulcer. March 11, 1930, duodenal ulcer	Gained fifteen pounds. No bleeding, only slight pain. Last seen, September 25, 1930

deaths, and it would seem that in two cases more conservative operations should have been done. In the twenty-one cases that have been operated upon or treated conservatively, but which have not been followed, there is little information that can be gained from the study of this group, except that the patients were discharged improved. Of the twenty-one cases now under observation in the clinic, it is interesting to note that five of these were being treated for chronic ulcers and progressing satisfactorily when they hæmorrhaged severe enough to confine them to the hospital while under our care.

TABLE XVIII

Cases That Bled Without Previous Treatment

No.	Date	Age	Sex	Past history	Location of lesion	Previous treatment
7	January 4, 1930	22	M	Abdominal pain for six months. Tarry stools for two weeks.	Duodenal	None
8	February 1, 1930	47	M	Fainted and fell at work; received lacerated scalp. Two dizzy spells few days before. Tarry stools after entering hospital.	Duodenal	None
9	March 1, 1930	31	F	Pain in upper abdomen for twelve years. Vomiting of blood and tarry stools nine years ago. In bed ten days. Repeated about every three years since. Last two days ago.	Duodenal	Modified Sippy diet

No.	Stay in hospital	Treatment in hospital	X-rays	Follow-up
7	January 4, 1930 to January 10, 1930 A. O. R.	Infusion and Sippy diet.	January 20, 1930, duodenal ulcer	April 10, 1930. Social Service visit, moved
8	February 1, 1930 to February 20, 1930	Transfusion, February 11, 1930, 500 cubic centimeters. Transfusion, February 15, 1930, 500 cubic centimeters.	March 8, 1930, duodenal deformity. July 15, 1930, negative	Improved, no complaints. Last seen, July 17, 1930. Gained ten pounds
9	March 1, 1930 to March 6, 1930 A. O. R.	Hypodermoclysis and Sippy diet. Transfusion refused.	April 10, 1930, duodenal ulcer	Improved, no complaints. Last seen, June 6, 1930

Also, two cases have been operated upon for bleeding ulcers but have continued to bleed since their operations. During this period of nineteen and one-half years there have been ten full-attending surgeons responsible for the treatment of these cases and in view of that it would seem the treatment has been fairly uniform and the mortality of 19 per cent. not unduly high.

Comment.—After studying these cases, it may seem confusing to determine how bleeding ulcers should be treated, but, as has been noted, the cases of acute hæmorrhages that proved fatal in spite of conservative treatment usually occurred in patients with negative or short gastric histories. The cases with chronic recurring hæmorrhages can usually be controlled by conservative treatment but whether they are permanently cured cannot be stated at present. Surgery seems indicated in chronic hæmorrhages if the patient is incapacitated at frequent intervals. The type of operation can be decided upon only after exploring the lesion, but if possible the ulcer should be cauterized or excised, plus whatever operative procedure may seem indicated. It is very questionable whether partial gastrectomies are ever indicated in bleeding lesions, either of the stomach or duodenum.

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